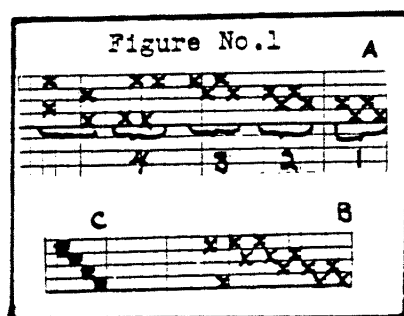


### Designing Over-Shot Threading Drafts.

Last month the method of designing three block patterns from unit blocks was given. If you have studied this carefully step by step, you have learned how to design many different kinds of patterns, and have acquired a real knowledge of some of the fundamental principles. To plan threading drafts for these pattern designs is the next step, and that will be discussed this month.

Explanation of Pattern Blocks of a four harness loom. It is possible to write four different pattern blocks on a four harness loom draft. By a draft is meant the plan which is used to thread each warp thread through the eye of one of the heddles on the loom. Each square of cross section paper indicates a warp thread, and each horizontal line of blocks one of the harnesses of the loom. Thus numbering from the bottom line, we have harness 1, 2, 3, and 4 at the top. The four pattern blocks are formed with combinations of these harnesses of the loom. They are pattern block No. 1 or harness 1 & 2, pattern block No. 2 or harness 2 & 3, Pattern block No. 3 or harness 3 & 4, and pattern block No. 4 or harness 4 & 1. On this system the plain weave harnesses are 1&3 and 2&4.



On paper these pattern block combinations are indicated as shown at Figure No. 1. Four threads have been written on each pattern block, and if you will note carefully the draft, you will see that the last thread of the preceding block is the same as the first thread of the next block, or to say it in another way, each pattern block overlaps the next pattern block with one thread in an over-shot draft. Also note carefully that if this last thread were to be left in the actual threading draft, two warp threads would be together on the same harness, and this would be incorrect, so omit one of these threads and write as at (B) of Figure No. 1. Another important point is

that the plain weave or tabby will not be correct if at any point of the threading draft, you skip from harness 1 to 3, or from 2 to 4, as this will also bring two threads together when you weave plain weave of such a draft. So every other thread of this system should be either a 1 or a 3, or a 2 or a 4. At (C) is shown four one unit pattern blocks. (B) shows the actual threading draft for these unit blocks using four threads for each pattern block unit of (C). Another point is that actual loom threading drafts generally read from the right to the left, instead of from left to right as one would read. This is probably due to the fact that the loom is generally threaded starting at the right and working toward the left hand side of the loom, hence it may be easier to read the draft when it is written from right to the left.

Also note that the threading draft at (B) of Figure No.1 does not repeat the last thread of the 4&1 block, because if it did when this pattern draft was repeated two threads would come together on harness 1.

At Figure No.2 on page 3 is the unit or "key draft" which formed the basis for the drawings in the June Handweaving News. Using this as a plan, we will draw the actual threading drafts in a number of different ways. This pattern uses only three of the pattern blocks. Four block patterns can be devised in exactly the same way, except that you use all four of the blocks.

Take four threads for each unit of the key draft, and three pattern blocks, namely 4&1, 4&3, and 3&2. For these drafts we will not use any block on the 1&2 pattern block, as we have no unit blocks on the key draft using this. The draft at Figure No.3 is an example of how this threading is worked out. The first unit on the key draft is a 3 unit pattern block on 4&1, so using 4 threads for each of the 3 units on the key draft at Figure No.2, we have 12 threads on the 4&1 pattern block. The next pattern block on the key draft is a two unit block on the 4&3 pattern block, so we write 8 threads for this, remembering that the pattern blocks overlap each other by one thread each time. The next block on the key draft is a one unit block written on the 4th pattern block, so is written 4,1,4,1. The next pattern block on the key draft is a 2 unit block written on the second pattern block, so write 8 threads on 2&3 pattern block. Right here note that you cannot skip from 1 to 3 and write this block beginning 3,2,3,2,3,2,3,2, or you would have an incorrect tabby alternation where the 1 and 3 came together.

Another important fact to note is that where a pattern block repeats back, as in the center of the threading, or at the blocks as checked on the key draft, the actual threading draft at that point must be written with an odd number of threads in the block to make the plain weave alternation correct. It is also easier to plan and mark where the centers of the key draft pattern come. This pattern key draft can center on either the very first pattern block of the key draft or at C as marked. It is well to mark your actual threading draft in the same way. Many times it is much easier to arrange your threading in the loom to suit the number of warp threads, if you know where the centers of your pattern draft threading are placed. At Figure No.2 the key draft repeat really stops at S, unless you wish to make a combination of the first and last pattern block to make it a 6 unit block, as the pattern repeats back on this block as well as the one marked C. The actual threading draft at Figure No.3 stops at S of the key draft, and also Figure No.4.

Some of the pattern blocks in the actual threading draft at Figure No.3 are rather long. If the warp threads are to be set rather far apart in the reed, it may be necessary to shorten up the pattern somewhat. When patterns are planned, it is always well to have in mind the number of threads to be used to the inch, so the over-shot pattern skips will not be too long. If the warp is set, say 15 threads to the inch, a 12 thread skip would be about  $3/4$ " in length. While if the warp is set at 30 threads to the inch that same skip will only be about  $1/3$ ". One way of making the threading smaller and still keep the pattern blocks relatively the same size is simply make each pattern block smaller by two threads. This has been done at threading draft Figure No.4. Another method of breaking up long over-shot skips is to write a single thread in the center of the pattern block as at Figure No.5. This shows two ways to break up the long skip on the 4&1 pattern block as on Figure No.3. In the case of the 4&1 pattern block this single thread may be written either on harness 2 or on harness 3. Which one to use depends on whether you want the resulting three thread skip to come on either 1&2 or 3&4 during the actual weaving of the fabric. As this is a three block pattern, and pattern block 1&2 would not be woven, this has been written to make the break on harness 1&2. In a four block pattern, these small skips would have an effect on the pattern, and should all be drawn out when the pattern draft is expanded.

Figure No.5

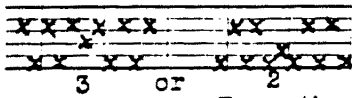


Figure No.2 "Key Draft"

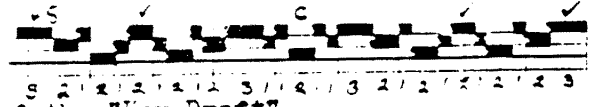


Figure No.3 Four threads for each unit of the "Key Draft".

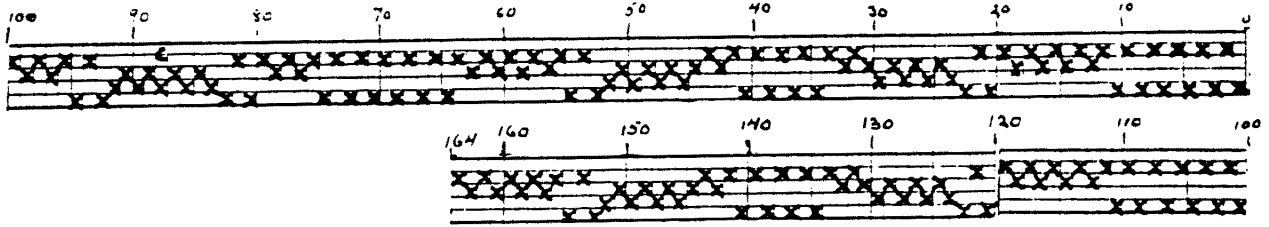


Figure No.4 Reducing each pattern block of No.3 by taking out 2 threads.

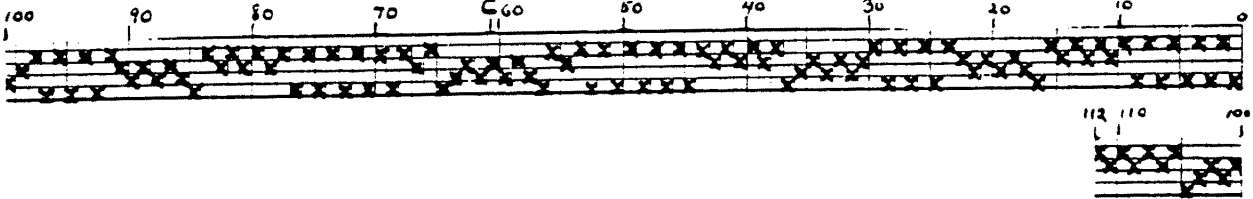


Figure No.6 Breaking up the long skips on the 4&1 pattern block.

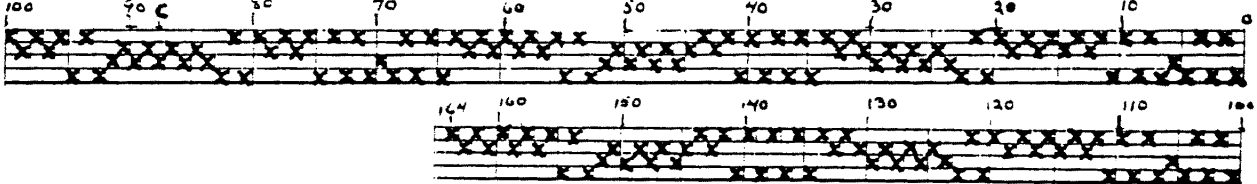


Figure No.7 Draft using only two threads for each unit of the Key Draft.

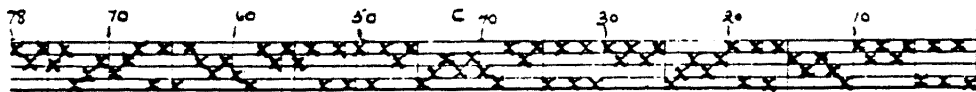


Figure No.8 Draft for Figure No.5 of June News. Long 4 unit Skips broken up.

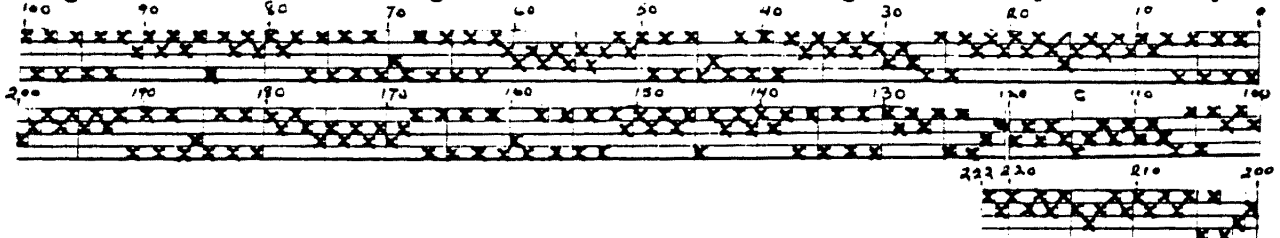
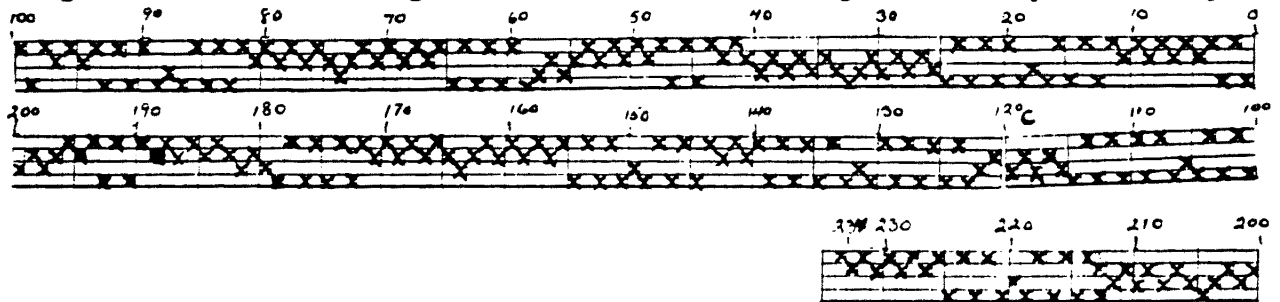


Figure No.9 Draft for Figure No.6 of June News. Long 4 unit skips broken up



Draft No.6 shows how these long pattern blocks are broken up by writing in one thread on the second harness. Compare this with the draft at Figure No.3. Draft No.7 is another way of writing a shorter draft on the same unit scheme as the key draft. But in this instance, the pattern blocks are only two threads for each unit. Note carefully how the draft has had to be slightly changed as the blocks are shortened up.

Weaving "as drawn" or in other words as the pattern is drafted. This means that each pattern block is woven square according to the number of threads or according to the number of units it contains, and in exactly the same order as it occurs in the actual threading or in the unit draft. Draft No.1 on page 1 of the June News is woven "as drawn", and this is explained in detail on Page 2. The actual threading draft order is followed down in the same way. If you thoroughly understand how the pattern blocks are formed from the unit draft, weaving as drawn, should present no difficulty. If you have any questions concerning this, let me know.

Tie-up of the loom. If you know that there are four pattern blocks in a pattern, and that these are made up of harness 1&2, 2&3, 3&4, and 4&1, the tying up of a loom and weaving of the pattern should present no trouble. For you always tie up your loom to weave the pattern blocks on which your pattern design is written. On a treadle loom the harnesses are pulled down by the treadles, on a jack loom or the Structo loom, bringing down the levers or treadles raises the harnesses, so in this case you use the "opposites", if you wish your pattern design to be on the top side of the weaving as you work. Or in other words, if you wish to weave the 1&2 pattern block, bring down levers 3&4. Do this and see that 1&2 harnesses are down, and in the same way use levers 1&4 for block 2&3; 1&2 levers for block 3&4; and 2&3 levers for pattern block 4&1.

Explanation of weaving "on Opposites". It is possible to weave any four harness loom pattern on opposites without a tabby or plain weave between the shots of weft. This is especially effective, the warp is set relatively far apart in the loom and several colors used. In this case, the warp is entirely covered. The opposites are harnesses 1&2 and 3&4; and 2&3 and 4&1. Use only one shot of weft on 1&2 with dark color, then one shot on 3&4 with light color. Alternate this until the pattern block you are weaving is square, then take the next pattern block in order. This would either be a 2&3 block or a 4&1, weave these alternately to square this block, and so on using the color with the best effect. Weaving "partly on opposites". Where a threading draft skips from the 1&2 block right to the 3&4, and then 1&4, to 2&3, and so on, or as this particular design does on the draft where it goes directly from the 4&1 block to the 2&3 block, and then continues with 3&4, 4&1 and so on, the draft is said to be written partly "on opposites". The little two thread blocks which occur when this is done are called "accidentals". These simple little threads often come in the wrong places and can mar the whole appearance of the pattern if care is not used. It is well to draft out on paper the complete threading draft of any draft where these occur so as to see exactly what the woven effect will be.

Arranging the pattern draft in the loom to suit the number of threads of warp to be used. Many questions are asked concerning this. If you know where the center of the actual threading draft occurs, note this. Suppose your draft contains 34 threads and your warp is 240 threads. Divide your number of warp threads by the number of threads in the draft. This equals 7, so the draft would go into 240, 7 times plus 22 threads over. So if you take off eleven threads at the beginning, and thread the pattern seven times, then take off 11 threads on the last part of your threading, you should come out correctly, if you have taken into account the center of the pattern draft.

Drafts No. 8 and 9 are the threading drafts for Pattern No.5 and 6 of the June News. The long skips in these have been broken up with the single threads. It is possible to plan large threadings to take up the whole width of the loom, with just one center. Will those of you who are interested to have me go further with this draft writing, kindly write me, and tell me what you would like.